Market Saturation and Utilization Data Tool

Technical Appendix

1. Purpose of the Analysis

Market saturation, in the present context, refers to the density of providers of a particular service within a defined geographic area relative to the number of the beneficiaries receiving that service in the area. The data can be used by the Centers for Medicare & Medicaid Services (CMS) to monitor market saturation as a means to prevent fraud, waste, and abuse (FWA). The data can also be used to reveal the degree to which use of a service is related to the number of providers servicing a geographic region. Provider services and utilization data by geographic regions are easily compared using an interactive map. There are a number of research uses for these data, but one objective of making these data public is to assist health care providers in making informed decisions about their service locations and the beneficiary population they serve.

2. Data and Analysis Population

The analysis is based on paid Medicare claims data from the CMS Integrated Data Repository (IDR). The IDR contains Medicare and Medicaid claims, beneficiary data, provider data, and plan data. Claims data are analyzed for a 12-month reference. Results are updated quarterly to reflect a more recent 12-month reference period.

3. Methodology

3.1 Beneficiary Location

A beneficiary's location is based on zip code information. Two strategies are used sequentially to determine location:

1. An attempt is made to match the beneficiary's 9-digit zip code to the Federal Information Processing Standard (FIPS) county and state ID numbers.
2. If there is no match using the 9-digit zip code, an attempt is made to match the beneficiary's 5-digit zip code to the FIPS county and state ID numbers.
3. If there is no match on either the 9- or 5-digit zip codes, the beneficiary is not included in the analysis.

3.2 Provider Location

Claims are used to define the geographic area(s) served by a provider rather than the provider's practice address. A provider is defined as "serving a county" if, during the one-year reference period, the provider had paid claims for more than 10 beneficiaries located in a county. A provider is defined as "serving a state" if that provider serves any county in the state.

3.3 Exclusionary Criteria

There are four exclusionary criteria imposed on the data. In particular:

1. The following United States territories, commonwealths, and freely associated states are excluded: American Samoa (AS); Micronesia (FM); Guam (GU); Northern Mariana Islands (MP); Puerto Rico (PR); and the U.S. Virgin Islands (VI).
2. If a beneficiary's county of residence cannot be determined, that beneficiary is excluded. (This generally represents a very small percent of the population (<1%).
3. Providers are excluded if they had paid claims for 10 or fewer beneficiaries located in the county.
4. Counties are excluded if 10 or fewer beneficiaries who had paid claims resided in the county.

3.4 Health Service Areas

3.4.1 Ambulance

Ambulance services are part of Medicare Part B. Ambulance services are evaluated in three groups: non-emergency ambulance services only, emergency ambulance services only, and non-emergency and emergency services combined.

3.4.1.1 Non-Emergency Ambulance

Non-emergency ambulance services are defined by Healthcare Common Procedure Coding System (HCPCS) codes A0425, A0426, and A0428 in order to determine the number of providers of these services. The number of non-emergency providers includes both emergency and non-emergency providers because non-emergency services can be provided by both emergency and non-emergency providers. Only A0426 and A0428 are used to determine the number of users of these services. In order to specify that ambulance services are Medicare Part B, the claim type is specified as 71 and 72.

3.4.1.2 Emergency Ambulance

Emergency ambulance services are defined by HCPCS codes A0427 and A0429 in order to determine the number of providers and users of these services. In order to specify that ambulance services are Medicare Part B, the claim type is specified as 71 and 72.

3.4.1.3 Non-Emergency and Emergency Combined

Combined non-emergency and emergency ambulance services are defined by HCPCS codes A0425, A0426, A0427, A0428, and A0429 in order to determine the number of providers and users of these services. In order to specify that ambulance services are Medicare Part B, the claim type is specified as 71 and 72.

3.4.2 Home Health

Home health services are part of Medicare Part A. Home health services are defined by the first digit of the type of bill (TOB1) used to identify the type of facility that provided care to the beneficiary. For home health, this digit is 3. In addition, the Claim Bill Classification FISS Valid Indicator is specified as equal to 2, and the Claim Bill Classification Code is specified as ***not*** being equal to 2.

3.4.3 Skilled Nursing Facilities

Skilled nursing facility services are part of Medicare Part A. Skilled nursing facility services are defined by the first digit of the type of bill (TOB1) used to identify the type of facility that provided care to the

beneficiary. For skilled nursing facilities, this digit is 2. In addition, the Claim Bill Classification FISS Valid Indicator is specified as 1.

3.4.4 Independent Diagnostic Testing Facilities (IDTF) Part A

IDTF Part A services are IDTF-like services rendered by non-IDTF facilities (e.g., critical access hospitals) that are billed under Part A. IDTF Part A are defined by the first digit of the type of bill (TOB1) used to identify the type of facility that provided care to the beneficiary. For IDTF Part A, this digit is 1. In addition, the Claim Bill Classification FISS Valid Indicator is specified as 3.

3.4.5 Independent Diagnostic Testing Facilities (IDTF) Part B

IDTF Part B services are defined by the CMS specialty code for pricing the line item service on the non-institutional claim. For IDTF Part B, this specialty code is 47. In order to specify that independent diagnostic testing facilities are Medicare Part B, the claim type is specified as 71 and 72.

3.4.6 Hospice

Hospice services are part of Medicare Part A. Hospice services are defined by the first digit of the type of bill (TOB1) used to identify the type of facility that provided care to the beneficiary. For hospice services, this digit is 8. In addition, the Claim Bill Classification FISS Valid Indicator is specified as 1 or 2.

3.4.7 Physical and Occupational Therapy

Physical and occupational therapy services are part of Medicare Part B defined by claim types 71 and 72), and are defined by the HCPCS codes listed in Appendix A.

3.4.8 Clinical Laboratory (Billing Independently)

Clinical laboratory (billing independently) services are defined by the CMS specialty code for pricing the line item on the non-institutional claim. For clinical laboratory (billing independently) services, this specialty code is 69. In order to specify that clinical laboratory (billing independently) services are Medicare Part B, the claim type is specified as 71 and 72. In addition, all HCPCS codes that begin with "8" except for 80500 are used to define this health service area, as well as the following HCPCS codes: 364150, P2028-P2029, P2033, P2038, P3000-P3001, P9010-P9012, P9016-P9017, P9019-P9023, P9031-P9041, P9043-P9048, P9050-P9060, P9070-P9072, P9603-P9604 and Q0111-Q0115.

3.5 Metrics

3.5.1 Number of Fee-For-Service (FFS) Beneficiaries

A FFS beneficiary is defined as being enrolled in Part A and/or Part B with a coverage type code equal to "9" (FFS coverage) for at least one month of the 12-month reference period. Beneficiaries must not have a death date for that month, and must have a valid zip so they can be assigned to a county.

3.5.2 Number of Providers

Claims are used to define the geographic area(s) served by a provider rather than the provider's practice address. A provider is defined as "serving a county" if, during the one-year reference period, the provider had paid claims for more than 10 beneficiaries located in a county. A provider is defined as "serving a state" if that provider serves any county in the state.

3.5.3 Average Number of Users per Provider

"Users" are the subset of FFS beneficiaries who have a paid claim for a service. This number is divided by the number of providers to obtain the average number of users per provider.

3.5.4 Percentage of Users out of FFS Benes

The proportion of FFS beneficiaries who have a paid claim for a service.

3.5.5 Average Number of Providers per County

For the nation, the average number of providers per county is the average number of providers across the U.S. counties (and the District of Columbia) included in the analysis. For each state, this number is the average across that state's counties. For each county, it is the number of providers in the county.

4. Market Saturation and Utilization Data Tool – Interactive Map Data

The interactive map is color-coded based on an analysis that separates the distribution into the following categories of states/counties for the selected metric: lowest 25 percent, second lowest 25 percent, 3rd lowest 25 percent, top 25 percent excluding extreme values, and extreme values. Extreme values are defined by the equation: (1.5 * (interquartile range)) + the 75^{th} percentile. Counties that are excluded from the analyses are colored grey in the interactive map.

For those interested in states and counties affected by CMS' temporary provider enrollment moratoria, the interactive map permits a visualization that identifies those states and counties. In this visualization, ambulance and home health service areas for moratoria versus non-moratoria states/counties are also identified based on color scheme.

Notes:

1. *The initial release of the ambulance and home health data (2016-01-29) defined a FFS beneficiary as being enrolled in Part A and Part B. All subsequent releases define a FFS beneficiary as being enrolled in Part A and/or Part B.*
2. *The initial release of the ambulance and home health data (2016-01-29) defined a user of a health service area as any beneficiary who met the qualifying criteria for the health service area. All subsequent releases define a user of a health service area as any beneficiary who met the qualifying criteria for the health service and was a subset of the FFS beneficiary population.*
3. *Ambulance (Emergency) data for the 2014-10-01 to 2015-09-30 and 2015-01-01 to 2015-12-31 reference periods as included in the second release (2016-06-22) were revised in the 2016-07-15 data files.*

Appendix A

HCPCS Codes Used to Define Physical and Occupational Therapy

CPT/HCPCS	Description
64550	Transcutaneous electrical nerve stimulation (TENS)
90901	Modality or biofeedback training
90911	Pelvic floor training
95831	Extremity (excluding hand) or trunk muscle testing, manual (separate procedure) with report
95832	Muscle testing, hand
95833	Muscle testing, total evaluation body, excluding hands
95834	Muscle testing, total evaluation body, including hands
95851	Linked services 97140
95852	Linked services 97140
95992	Standard Canalith repositioning procedure
97001	Physical therapy evaluation
97002	Physical therapy re-evaluation
97003	Occupational therapy evaluation
97004	Occupational therapy re-evaluation
97010	Hot or cold pack application
97012	Mechanical traction
97016	Vasopneumatic device
97018	Paraffin Bath
97022	Whirlpool
97024	Diathermy
97026	Infrared light
97028	Ultraviolet light
97032	Electrical stimulation
97033	Electrical current
97034	Contrast bath
97035	Ultrasound
97036	Hubbard tank
97039	Physical therapy treatment
97110	Therapeutic exercises to develop strength and endurance, range of motion, and flexibility (15 minutes)
97112	Neuromuscular re-education of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities (15 minutes)
97113	Aquatic therapy/exercises
97116	Gait training
97124	Massage
97139	Physical medicine procedure
97140	Manual therapy techniques (e.g., connective tissue massage, joint mobilization and manipulation, and manual traction) (15 minutes)
97150	Group therapy procedures

97530	Dynamic activities to improve functional performance, direct (one-on-one) with the patient (15 minutes)
97533	Sensory integration
97535	Self-care management training
97537	Community/work reintegration
97542	Wheelchair management training
97597	Wound care selective, first 20 square cm
97598	Wound care selective, additional 20 square cm
97602	Wound care non-selective
97605	Linked services 97605
97606	Linked services 97605
97607	Linked services 97605
97608	Linked services 97605
97610	Low frequency, non-contact, non-thermal ultrasound
97750	Physical performance test
97755	Assistive technology assessment
97760	Orthotic management and training
97761	Prosthetic training
97762	Orthotic/prosthetic check out
97799	Unlisted physical medicine/rehabilitation service or procedure
G0281	Electrical stimulation unattended for pressure
G0283	Unattended electrical stimulation for other than wound care purposes
G0329	Electromagnetic testing for ulcers
G0451	Development testing with interpretation and reporting per standardized instrument form